



IN THE CLAIMS

The pending claims are as follows:

1. (Original) An integrated circuit chip assembly, comprising:
 - an integrated circuit chip;
 - a heat spreader;
 - a thermal interface structure, including a perimeter seal portion, the seal portion coupled between the heat spreader and at least a portion of a surface of the integrated circuit chip; and
 - wherein at least one interface of the perimeter seal portion includes cold formed features.
2. (Original) The integrated circuit chip assembly of claim 1, wherein the thermal interface structure further includes a liquid material located within the perimeter seal portion and between the integrated circuit chip and the heat spreader.
3. (Original) The integrated circuit chip assembly of claim 2, wherein the liquid material is in direct contact with both the integrated circuit chip and the heat spreader.
4. (Original) The integrated circuit chip assembly of claim 2, wherein the liquid material includes liquid gallium metal.
5. (Original) The integrated circuit chip assembly of claim 1, further including a number of guide portions within the perimeter seal portion.
6. (Original) The integrated circuit chip assembly of claim 1, wherein the perimeter seal portion is formed from indium.
7. (Currently Amended) The integrated circuit chip assembly of claim 1, wherein at least one interface of the perimeter seal portion further includes an intermetallic compound formed from ~~the mating materials~~ a first and second mating material at the interface.

8. (Original) The integrated circuit chip assembly of claim 5, wherein the guide portions form longitudinal spaces having widths of approximately 0.0025 – 0.0050 cm.

9. (Original) The integrated circuit chip assembly of claim 1, wherein the thermal interface structure has a thickness of approximately 0.0025 – 0.0050 cm.

10. (Withdrawn) A processor assembly, comprising:

- a processor chip;

- a heat spreader;

- a thermal interface structure, including;

- a metal perimeter seal portion to contain an amount of liquid, the seal portion coupled between the heat spreader and at least a portion of a surface of the integrated circuit chip;

- an amount of liquid material located within the perimeter seal portion; and

- a pump operably coupled to the perimeter seal portion capable of circulating the amount of liquid material through the perimeter seal portion.

11. (Withdrawn) The processor assembly of claim 10, wherein at least one interface of the metal perimeter seal portion includes cold formed features.

12. (Withdrawn) The processor assembly of claim 10, wherein the thermal interface structure further includes a number of guide portions within the perimeter seal portion to channel flow of the amount of liquid material.

13. (Withdrawn) The processor assembly of claim 10, wherein the metal perimeter seal portion is formed from indium.

14. (Withdrawn) The processor assembly of claim 10, wherein the heat spreader includes a package cover that substantially encloses the chip and thermal interface structure on a substrate.

15. (Withdrawn) The processor assembly of claim 14, further including a sealant between the package cover and the substrate.

16. (Withdrawn) The processor assembly of claim 10, further including a heat sink coupled to the heat spreader.

17. (Withdrawn) The processor assembly of claim 10, further including a heat exchanger operably coupled with the pump and the thermal interface structure, the heat exchanger located apart from the thermal interface structure.

18. (Withdrawn) An information handling system, comprising:

- a dynamic random access memory;

- a system bus coupled to the dynamic random access memory;

- a processor assembly coupled the system bus, the processor assembly including:

- a processor chip;

- a heat spreader;

- a thermal interface structure, including;

- a metal perimeter seal portion to contain an amount of liquid, the seal portion coupled between the heat spreader and at least a portion of a surface of the integrated circuit chip;

- an amount of liquid material located within the perimeter seal portion; and

- a pump operably coupled to the perimeter seal portion capable of circulating the amount of liquid material through the perimeter seal portion.

19. (Withdrawn) The information handling system of claim 18, wherein the thermal interface structure is coupled between the heat spreader and at least a portion of a backside surface of the integrated circuit chip in flip-chip orientation.

20. (Withdrawn) The information handling system of claim 18, further including a heat exchanger operably coupled with the pump and the thermal interface structure, the heat exchanger located apart from the thermal interface structure.

21. (Withdrawn) The information handling system of claim 18, wherein the dynamic random access memory includes synchronous dynamic random access memory.

22. - 30. (Canceled)